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CANADIAN PATENT

SECURING OF WIRE ROPES

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Granted to The Reliance Rope Attachment Company Limited,
Cardiff, Glamorganshire, Wales

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No. OF CLAIMS 8

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This invention relates to means for securing a winding haulage or other wire rope, either to an anchorage point or to a load to be moved. While not limited to any particular application, the invention is primarily intended for use in effecting the attachment of a winding or balance rope to a pit shaft conveyance.

In a commonly employed manner of attaching a winding rope to a pit shaft conveyance, the rope is gripped at a short distance from its end in a wedge type cappel. In alternative known manners of attachment, the rope is passed around a thimble, the end portion of the rope being brought back and spliced into the main rope, or both the end portion and the main rope are compressed together by clamping means, or both the main rope and the end portion are wedged between the thimble and a thimble casing. As compared with the first mentioned arrangement, these latter arrangements have the advantage of facilitating the operation of recapping the rope, since the end of the rope is readily accessible for pulling the rope into a fresh position relative to the thimble and enables quick and easy adjustment of individual ropes of a multi-rope friction winder the length of which may vary due to individual stretching.

The splicing of the end portion into the main rope can only be carried out with stranded ropes and may result in the breaking strength at the splice being reduced to about 70% of the breaking strength of the main rope.

The present invention provides an improved securing means which possesses the above mentioned advantages of facilitated recapping and easy adjustment and also may be used with locked coil or stranded ropes.

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winding installation and comprises a substantially pear-shaped thimble 1 having a peripheral groove for the reception of the rope 2. The diameter of the circularly curved lower part of the thimble is arranged to be some large multiple of the diameter of the rope to be used, so as to facilitate easy bending of the rope around the thimble without creating large differences of bending stresses in the rope wires. In the case of lock coil ropes this multiplying factor is greater than for stranded ropes. In the particular case illustrated the factor has a value of about 20. An aperture 11 is provided in the thimble for accommodating a shackle pin or other means for securing the thimble to the load.

The main body of the thimble has flat sides lying in planes parallel to that of the rope, but at its upper, narrower end 12 the thimble is increased in thickness. Co-operating with this thicker upper end of the thimble are a pair of clamping members 31 and 32, one on each side of the thimble, whose inner faces are formed with grooves to engage the adjacent portions of the rope. A pair of bolts 31a pass through apertures 33 in the clamping members and the thimble, one on each side of the two adjacent portions of the rope, and allow the clamping members to be drawn towards the thimble so that each portion of the rope is gripped between the thimble and one of the clamping members.

The clamping members 31, 32 project above the upper end of the thimble and between the projecting portions there is disposed an intermediate member 34, which engages between the main portion 21 and the end portion 22 of the rope and is grooved to receive them. A second

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clamping members. The two clamping devices situated
furthest away from the thimble and its associated clamping
members, have their rope engaging faces provided with a
lining 44 of leather or other suitable material. The
5 number of these lined clamping devices and the total number
of clamping devices employed may be varied as found
desirable for the requirements of any particular case.

Although the invention has been primarily described
in connection with load bearing wire ropes it may equally
10 be used in connection with balance or tail ropes,
generally used in connection with mine shaft winding for
the purpose of equalising the out-of-balance torque.

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6. A terminal ending as claimed in claim 1, 2 or 3, wherein the thimble is pierced by an aperture arranged to receive link means for connecting the thimble with a load or anchorage, the aperture being disposed in line with the axis of the main rope portion.
7. A terminal ending as claimed in claim 2, 3 or 4, wherein the diameter of the circularly curved part of the thimble is a large multiple of the diameter of the rope with which the thimble is adapted to be used.
8. A terminal ending as claimed in claim 3 or 4 wherein the rope engaging faces of the clamping means are lined with leather or other suitable material.

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